

Notice of Allowability

Application No.

09/895,287

Examiner

Ted T. Vo

Applicant(s)

SUSARLA ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 7/15/04.
2. ☒ The allowed claim(s) is/are 1-66.
3. ☒ The drawings filed on 29 June 2001 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
- * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date 7/15/04
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date 10/25/04
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other


TUAN DAM
SUPERVISORY PATENT EXAMINER

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

2. Authorization for this examiner's amendment was given in a telephone interview with Applicants representative, Mr. Kowert, Attorney Reg. No. 39,255, on 10/22/04.

Examiner Amendment is given to Claims 11, 19, 24, 28, 33, 35, 47, 51, and 60 for resolving 35 U.S.C. 112 second paragraph issue to place the application in the condition for allowance.

3. In the claims, amended Claims 11, 19, 24, 28, 33, 35, 47, 51, and 60 as follows:

Claim 11. (Currently amended) The method as recited in claim 8, wherein the application server is based on a platform independent multi-tier application server framework [Java™ 2 Platform, Enterprise Edition specification].

Claim 19. (Currently amended) The method as recited in claim 12, wherein the stack of class loader further includes one or more class loaders based on a platform independent component architecture for multi-tier client/server systems [an Enterprise JavaBeans (EJB) specification], wherein each of the one or more class loaders is a child of one module class loader in the hierarchical stack of class loaders.

Claim 24. (Currently amended) The method as recited in claim 23, wherein the hierarchical stack of class loader further includes one or more class loaders based on a platform independent component architecture for multi-tier client/server systems [an Enterprise JavaBeans (EJB) specification], wherein each class loaders is a child of one module class loader in the hierarchical stack of class loaders.

Claim 28. (Currently amended) The method as recited in claim 21, wherein the application server is based on a platform independent multi-tier application server framework [Java™ 2 Platform, Enterprise Edition specification].

Claim 33. (Currently amended) The system as recited in claim 29, wherein [wherein] the class loader controller of each dynamic class reloading module is operable to:

receive a notification that the class has been changed;

determine which class loader in the hierarchical stack of class loaders is operable to load the class;

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perform said replacing the class loader with the new class loader; and
invoke the new class loader to perform said reloading the changed class.

Claim 35. (Currently amended) The system as recited in claim 29, wherein the application server is based on a platform independent multi-tier application server framework [Java™ 2 Platform, Enterprise Edition specification].

Claim 47. (Currently amended) The system as recited in claim 45, wherein the application server is based on a platform independent multi-tier application server framework [Java™ 2 Platform, Enterprise Edition specification].

Claim 51. (Currently amended) The system as recited in claim 48, wherein the stack of class loader further includes one or more class loaders based on a platform independent component architecture for multi-tier client/server systems [an Enterprise JavaBeans (EJB) specification], wherein each of the one or more class loaders is a child of one module class loader in the hierarchical stack of class loaders.

Claim 60. (Currently amended) The carrier medium as recited in claim 59, wherein the application server is based on a platform independent multi-tier application server framework [Java™ 2 Platform, Enterprise Edition specification].

----- End -----

Reasons for Allowance

4. This communication is in response to the amendment filed on 7/15/04 responsive to Office Action mailed on 4/13/04.

Prior to this Examiner's Amendment, the amendment filed on 7/15/04, is included with Claims 1, 4, 11, 19, 21, 24, 28, 33, 35, 36, 39-42, 47, 51, 53, 56, 57 and 60 amended, and Claims 63-66, newly added.

Applicants' arguments to the amended claims have been fully considered and overcome the rejection under 35 U.S.C. 102(b) as being anticipated by prior art of record, Liang et al., "Dynamic Class Loading in the Java™ Virtual Machine".

5. Claims 1-66 are allowed.

Prior art of record, Liang, discloses a dynamic class loading method in a JVM, provided with user-defined class loaders. With the use of the user-defined class loaders, the JVM can control loading classes by reloading new classes.

However, with regards to the limitations recited in Claims 1, 21, 36, 53, and 63, as pointed out by Applicants to that, Liang fails to mention anything regarding a class loader controller and Lang fails to disclose a class loading a class in the application in response to an invocation from a class loader controller (remarks: page 21, lines 2-6), and that, Liang does not disclose Class loader is one of hierarchal stack (remarks: page 21, first full paragraph (Furthermore...)), and that, Liang fails to teach a class loader controller that provides an interface to hierarchical stack of class loaders and a common entry point for loading classes of the application, instead, each classes defining class loader is used by the Java Virtual machine, in response to references in the code (remarks: pages 21, last two lines, and page 22, lines 1-7).

Furthermore, with regards to the limitations of Claim 29, as pointed out by Applicants that, Liang fails to teach hierarchical stack of class loaders, a separate class loader for each module in the particular

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application, and the replaced one or more class loaders for one or more classes with dependencies on the change class; that Liang teaches only reloading a subset of classes already loaded in a running virtual machine (remarks: page 23, last 3 lines, and page 24, lines 1-9).

Therefore, the following is an examiner's statement of reasons for allowance: The cited prior arts taken alone or in combination fail to teach claimed invention comprising at least features,

"a class loader, in response to an invocation from a class loader controller, loading a class in the application, wherein the class loader is one of a hierarchal stack of class loaders each configured to load one or more classes in the application, wherein the class loader controller provides an interface to the hierarchical stack of class loaders and a common entry point for loading classes of the application;

detecting the class has been changed;

the class loader controller replacing the class loader in the hierarchy of class loaders with a new class loader for the detected changed class; and

the new class loader reloading the changed class in the application"

as recited in independent Claim 1 and in such manners in independent Claims 21, 36, 53, and 63, and so as,

"wherein one or more of the plurality of applications each includes a dynamic class reloading module comprising a hierarchical stack of class loaders, wherein the hierarchical stack of class loaders includes a separate class loader for each module in the particular application, and wherein each class loader is operable to reload one or more classes used by the particular application;

wherein, for each of the one or more applications, the dynamic class reloading modules is operable during execution of the application to: detect that a class used by the application has been changed; replace a class loader for the class in the hierarchical stack of class loaders with a new class loader for the detected changed class; and wherein the new class loader is operable to reload the changed class in the first application during execution of the first application",

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as recited in such manners in independent Claim 29.


6. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ted T. Vo whose telephone number is (571) 272-3706. The examiner can normally be reached on 8:00AM to 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Q. Dam can be reached on (571) 272-3694. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TTV
Patent Examiner
Art Unit 2122
October 25, 2004



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SUPERVISORY PATENT EXAMINER